

Application No.: 10/594,161
Amendment Dated: January 9, 2012
Reply to Office Action of: October 7, 2011

MAT-8897US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/594,161
Applicants: Tomohiro MURAKOSO et al.
Filing Date: October 26, 2006
Title: PLASMA DISPLAY PANEL
T.C./A.U.: 2889
Examiner: Elmito Breval
Confirmation No.: 6176
Docket No.: MAT-8897US

AMENDMENT UNDER 37 C.F.R. § 1.116

Expedited Procedure

MAIL STOP AF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Responsive to the Final Office Action dated **October 7, 2011**, please amend the above-identified application as follows:

- ☐ **Amendments to the Specification** begin on page _____ of this paper.
- ☒ **Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.
- ☐ **Amendments to the Drawings** begin on page _____ of this paper and include an attached replacement sheet(s).
- ☐ **Amendments to the Abstract** are on page _____ of this paper. A clean version of the Abstract is on page _____ of this paper.
- ☒ **Remarks/Arguments** begin on page 6 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A plasma display panel driven by plural subfields forming one field,

the subfields comprising:

a writing period during which writing discharging occurs in discharge cells to be displayed; and

a sustaining period during which sustain discharging occurs in the discharging cells in which the writing discharging occurs during the writing period,

the plasma display panel comprising:

a first substrate;

plural pairs of display electrodes, each pair consisting of a scanning electrode and a sustain electrode which are arranged parallel to each other on the first substrate;

a second substrate disposed opposite to the first substrate such that a discharge space is formed between the first substrate and the second substrate; and

plural data electrodes disposed on the second substrate in a direction perpendicular to the display electrodes, the plural data electrodes including a middle portion having a first constant width, opposite end portions having a second constant width, and respective tapered portions extending from the middle portion to each of the end portions; portions; and

a plurality of barrier ribs arranged parallel to the plural data electrodes such that respective ones of the discharge cells are formed between adjacent two of the barrier ribs,

wherein the second constant width is greater than the first constant width by a factor of more than 1.0 and not more than 1.5,

the second constant width is not more than a half of a spacing between the adjacent two of the barrier ribs,

respective ones of the discharge cells include a phosphor operable to emit a blue color, a phosphor operable to emit a red color, or a phosphor operable to emit a green color, and

the opposite end portions of the data electrode corresponding to the respective one of the discharge cells including the phosphor operable to emit the blue color are wider than the opposite end portions of the data electrode corresponding to the respective one of the discharge cells including the phosphor operable to emit the red color.

2. (Cancelled)

3. (Previously Presented). The plasma display panel of claim 1, wherein the data electrode increases in width continuously from the central portion of the second substrate toward the peripheral portion of the second substrate.

4.-10. (Cancelled).

11. (Previously Presented) A plasma display panel driven by plural subfields forming one field,

the subfields comprising:

a writing period during which writing discharging occurs in discharge cells to be displayed; and

a sustaining period during which sustain discharging occurs in the discharging cells in which the writing discharging occurs during the writing period,

the plasma display panel comprising:

a first substrate;

plural pairs of display electrodes, each pair consisting of a scanning electrode and a sustain electrode which are arranged parallel to each other on the first substrate;

a second substrate disposed opposite to the first substrate such that a discharge space is formed between the first substrate and the second substrate;

a plurality of barrier ribs such that the barrier ribs are arranged parallel to the data electrodes and respective ones of the discharge cells are formed between adjacent two of the barrier ribs; and

plural data electrodes disposed on the second substrate in a direction perpendicular to the display electrodes, the plural data electrodes including a middle portion having a first constant width, opposite end portions having a second constant width, and respective tapered portions extending from the middle portion to each of the end portions,

wherein the second constant width is not more than a half of a spacing between the adjacent two of the barrier ribs,

respective ones of the discharge cells include a phosphor operable to emit a blue color, a phosphor operable to emit a red color, or a phosphor operable to emit a green color, and

the opposite end portions of the data electrode corresponding to the respective one of the discharge cells including the phosphor operable to emit the blue color are wider than the opposite end portions of the data electrode corresponding to the respective one of the discharge cells including the phosphor operable to emit the red color.

Application No.: 10/594,161
Amendment Dated: January 9, 2012
Reply to Office Action of: October 7, 2011

MAT-8897US

12. (Previously Presented) The plasma display panel of claim 11, wherein the data electrode increases in width continuously from the central portion of the second substrate toward the peripheral portion of the second substrate.

Application No.: 10/594,161
Amendment Dated: January 9, 2012
Reply to Office Action of: October 7, 2011

MAT-8897US

Remarks/Arguments:

Claims 1, 3, 11, and 12 are presently pending. Claim 1 is amended herein to include the features of claim 10, and claim 10 is cancelled. Reconsideration is respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. § 103

Claims 1, 3, 11, and 12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Uchida (JP 2003-308783) in view of Nunomura (US 6,479,932) and Kim (US 2005/0067964). Applicants respectfully submit that these claims are allowable over the applied references for the reasons set forth below.

Applicants' invention, as recited by claim 1, includes features which are not disclosed, taught, or suggested by the applied references, namely:

...plural data electrodes...including a middle portion having a first constant width [and] opposite end portions having a second constant width...and...

...a plurality of barrier ribs...

...wherein...the second constant width is not more than a half of a spacing between the adjacent two of the barrier ribs...

The data electrodes have a middle portion with a first constant width and opposite end portions having a second constant width. The second constant width is not more than half of the spacing between adjacent barrier ribs. This feature is found in the originally filed application at page 16, lines 17-18. No new matter is added.

Applicants respectfully submit that the applied references fail to disclose, teach, or suggest at least the above features of claim 1.

Uchida is directed to a plasma display panel. As illustrated in FIGS. 1 and 3, for example, Uchida discloses a plasma display panel having a plurality of rear electrodes 1A and 1C. Rear electrodes 1A and 1C are wide at a top portion and narrow at a bottom portion. See Uchida at FIGS. 1 and 3.

Application No.: 10/594,161
Amendment Dated: January 9, 2012
Reply to Office Action of: October 7, 2011

MAT-8897US

The Office Action acknowledges that "Uchida...teaches all the claimed limitations except for the second constant width is not more than a half of a spacing between adjacent two barrier ribs." See the Office Action at page 5. Applicants agree.

Uchida fails to disclose, teach, or suggest an electrode having opposite end portions that are wider than a middle portion. Further, Uchida provides no teaching regarding the width of end portions of an electrode relative to the spacing between adjacent barrier ribs. This is different from claim 1, which requires that the width of the end portions of the electrodes be not more than half of the spacing between adjacent barrier ribs.

Applicants respectfully submit that Nunomura fails to make up for the deficiencies of Uchida with respect to claim 1.

Nunomura is also directed to a plasma display panel. As illustrated in FIG. 21, Nunomura discloses a plasma display panel having data electrodes 16. Data electrodes 16 have wide portions 33 and narrow portions 34. See Nunomura at column 13, lines 10-29, and FIG. 21.

The Office Action asserts that "as can be seen (in at least fig. 16 of [Nunomura]) the second constant width 33 appears to be about half of the distance between adjacent barrier ribs." See Office Action at page 5. Applicants disagree for two reasons.

First, FIG. 16 of Nunomura illustrates that wide portions 33 have a width that is more than half of the spacing between adjacent barrier ribs. Second, regardless of the measurements of the figures themselves, Nunomura fails to disclose, teach, or suggest that its figures are drawn to scale. "When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value." See M.P.E.P. § 2125. Because Nunomura is silent as to the dimensions of wide portions 33 relative to the spacing between barrier ribs, Applicants submit that the Office Action's arguments based on the figures of Nunomura cannot be used to reject the claims.

The Office Action further asserts that "[i]t would have been obvious...to form the second constant width not more than a half of the spacing between adjacent two barrier ribs through routine experimentation and optimization, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art." See Office Action at page 5. Applicants disagree.

Nunomura provides no teaching regarding the width of end portions of an electrode relative to the spacing between adjacent barrier ribs. "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." Nunomura fails to recognize that the ratio of an electrode's end portion width to the spacing of adjacent barrier ribs is a variable which achieves a recognized result (i.e. a result-effective variable). Thus, Applicants submit that one of ordinary skill in the art would have no reason to optimize this variable based on the teachings of Nunomura. As such, Applicants submit that the ratio recited in claim 10 is not obvious in view of Nunomura.

Applicants respectfully submit that Kim fails to make up for the deficiencies of Uchida and Nunomura with respect to claim 1.

Kim is also directed to a plasma display panel. As illustrated in FIG. 6, Kim discloses a plasma display panel having address electrodes 521, 522, 523. Address electrode 521 corresponds to a blue discharge cell 550B, while address electrode 522 corresponds to a red discharge cell 550R. Address electrode 521 includes a prominent electrode 561 which is wider than a corresponding prominent electrode 562 of address electrode 522. See Kim at paragraphs [0046]-[0050] and FIG. 6.

Like Uchida and Nunomura, Kim provides no teaching regarding the width of end portions of an electrode relative to the spacing between adjacent barrier ribs. This is different from claim 1, which requires that the width of the end portions of the electrodes be not more than half of the spacing between adjacent barrier ribs.

For the above reasons, Applicants respectfully submit that Uchida in view of Nunomura and Kim fails to disclose, teach, or suggest the features of "plural data

Application No.: 10/594,161
Amendment Dated: January 9, 2012
Reply to Office Action of: October 7, 2011

MAT-8897US

electrodes...including...opposite end portions having a second constant width...and...a plurality of barrier ribs...wherein...the second constant width is not more than a half of a spacing between the adjacent two of the barrier ribs," as recited in claim 1.

It is because Applicants' invention includes the above features that the following advantages are achieved. "By setting the dimensions in this way, data electrodes 10 are reliably disposed between barrier ribs 11." See the originally filed application at page 16, lines 19-20.

Accordingly, for the reasons set forth above, claim 1 is allowable over the applied references. Withdrawal of the rejection and allowance of claim 1 is respectfully requested.

Claim 11, while not identical to claim 1, includes the allowable features discussed above with respect to claim 1. Accordingly, claim 11 is allowable over the applied references for at least the reasons set forth above with respect to claim 1. Withdrawal of the rejection and allowance of claim 11 is respectfully requested.

Claims 3 and 12 include all of the features of claims 1 and 11, respectively, from which they depend. Accordingly, claims 3 and 12 also allowable over the applied references for at least the reasons set forth above with respect to claims 1 and 11. Withdrawal of the rejection and allowance of claims 3 and 12 is respectfully requested.

Application No.: 10/594,161
Amendment Dated:
Reply to Office Action of: October 7, 2011

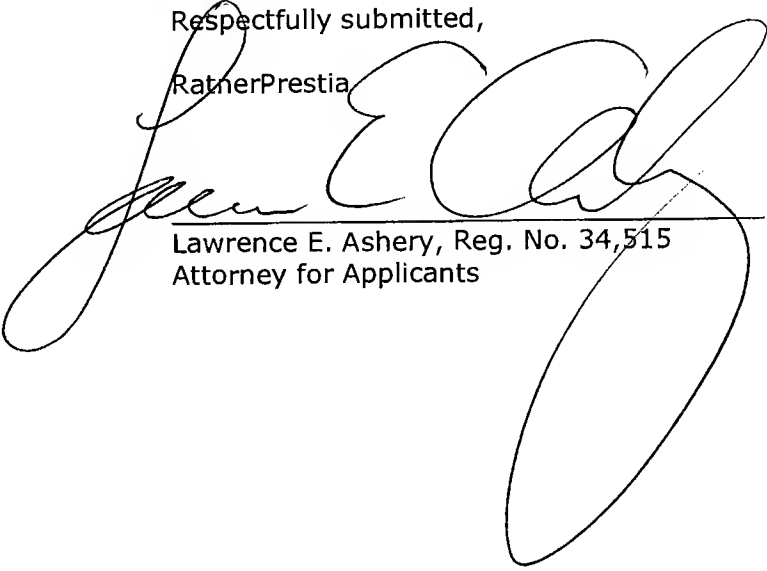
MAT-8897US

Conclusion:

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

RatnerPrestia



Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicants

AJK/sep

Dated: January 9, 2012

P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

SH_1386645